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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,858	04/19/2005	Ian Alastair Kirk	8830-334US1 (209104)	4000

7590 04/20/2009  
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EXAMINER
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HARCOURT, BRAD

ART UNIT	PAPER NUMBER
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3676

MAIL DATE	DELIVERY MODE
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04/20/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,858	<b>Applicant(s)</b> KIRK ET AL.	
	<b>Examiner</b> Brad Harcourt	<b>Art Unit</b> 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-12,14-16,19,21-34 and 36-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-12, 14-16, 19, 21-34, 36-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 11, 12, 14-16, 25, 26, 28, 31-34, 36, 39, 43 and 44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Metz (US Patent No. 4,083,406).

In reference to claims 1 and 44, Metz discloses a flow control insert 28 for a downhole string 16 including a shoe 28, the flow control insert 28 being formed separately from the downhole string 16 and being adapted to be inserted within the downhole string 16 above the shoe 28 (see Fig. 1);

wherein the flow control insert 28 is adapted to decelerate the flow of fluid through the downhole string 16; and

wherein the flow control insert 28 comprises a passage which includes at least one spiral portion (see Fig. 1).

In reference to claim 3, a central body member 30 has spiral vanes 28 disposed thereon (Fig. 2).

In reference to claim 4, a shoe 52 engages insert 28 and body member 30 through tubular 22.

In reference to claim 5, "tube 22 preferably forms a snug fit with the interior surface of the casing" (col. 4, lines 51-52) which would prevent rotational movement of the insert 28.

In reference to claim 11, tubular 22 constitutes a shroud as it surrounds insert 28.

In reference to claims 12 and 41, shroud 22 has apertures 60.

In reference to claims 14, 15 and 34, insert 28 has evenly spaced spiral passages with no obstructions (Fig. 1).

In reference to claims 16 and 33, Metz does not explicitly disclose that fluid would decelerate inside of insert 28, but fluid friction caused by contact with the spiral passage would inherently decelerate the fluid.

In reference to claims 25, 26 and 39, insert 28 is designed to mix fluids that pass through it, which implies that turbulence would be created.

In reference to claim 28, string 16 is a casing string.

In reference to claim 31, see claim 1 above. Additionally, the fluids disposed above insert 28 move in an axial direction until they enter insert 28, at which point they move in a spiral direction.

In reference to claim 32, the passage through insert 28 is considered to be inclined relative to the conduit axis.

In reference to claim 36, forcing fluid through any spiral passage such as insert 28 would cause the fluid to move through a large distance in a small axial space.

In reference to claim 43, see claim 1 above. Also, there are non-spiraled portions immediately above and below spiral insert 28.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metz (US Patent No. 4,083,406) in view of Baker (US Patent No. 2,178,846).

Metz discloses all of the limitations of the above claims with the exception of an anti-rotation means engaging a bore provided in the shoe. Baker discloses a flow control insert 15 that engages a shoe 10 through cement 11. It would have been obvious to a person having ordinary skill in the art at the time of the invention to fix a flow control insert to a shoe on the apparatus of Metz in view of Baker so that the insert does not move out of place while the string is being run into the well.

Claims 19, 29, 30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metz (US Patent No. 4,083,406) in view of Dillon et al. (US Patent No. 5,346,007).

Metz discloses all of the limitations of the above claims with the exception of making the apparatus uni-directional. Dillon discloses a float shoe 19 with a passage 23 and a check valve 24. It would have been obvious to a person having ordinary skill in the art at the time of the invention to include a check valve/float shoe on the bottom of a cement string of Metz in view of Dillon so that the fluid does not flow back into the string.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metz (US Patent No. 4,083,406).

Metz discloses all of the limitations of the above claims with the exception of the exact degree that the spiral passages are inclined. It would have been obvious to a person having ordinary skill in the art at the time of the invention to incline the passages of Metz between 70 and 80 degrees so that the fluid is mixed without imparting too much resistance to the flow.

Claims 23, 24, 27, 37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metz (US Patent No. 4,083,406) in view of Brockman et al. (US Patent No. 6,311,774).

Metz discloses all of the limitations of the above claims with the exception of including a second opposite spiral member. Brockman discloses first spiral section 72 and a second opposite spiral section 74 with a space in between (Fig. 7). It would have been obvious to a person having ordinary skill in the art at the time of the invention to include opposing spiral portions to provide a better fluid mixing on the apparatus of Metz in view of Brockman.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 3-12, 14-16, 19, 21-34, 36-41 and 43-44 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Harcourt whose telephone number is (571)272-7303. The examiner can normally be reached on Monday through Friday from 8:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shane Bomar/  
Primary Examiner, Art Unit 3676

BH  
4/13/09